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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,020	01/18/2001	Ji Zhang	CISCP158/3179	8083

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BEYER WEAVER & THOMAS, LLP
P.O. BOX 70250
OAKLAND, CA 94612-0250

EXAMINER

AN, SHAWN S

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 12/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/766,020

Applicant(s)

ZHANG ET AL.

Examiner

Shawn S. An

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,11-15 and 26-33 is/are pending in the application.
- 4a) Of the above claim(s) 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-8,11-15 and 26-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. As per Applicant's instructions as filed on 9/26/06, claims 1, 6, 26, and 30-32 have been amended, claims 2, 9-10, and 16-25 have been canceled, and claim 33 has been newly added.

Response to Remarks

2. Applicant's argument(s) with respect to amended claims have been carefully considered but are moot in view of the new ground(s) of rejection incorporating previously cited prior art references.

Note: Since newly added claim 33 represents Applicant's specific embodiment of the present invention (figure 5C), and the Applicant has previously selected group I (excludes Fig. 5C) including claims 1-15 and 26-30 in response to the election/restriction requirement as filed on 2/12/04, the newly added claim 33 has now been considered as withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-8, 11-15, and 26-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haskell et al (5,687,095) in view of Hamilton (5,617,142).

Regarding claims 1, 3, 26-28, and 30-31, Haskell et al discloses a system/apparatus/method/software (Fig. 6; col. 11, lines 1-4) for converting the bit rate of a compressed bitstream, the system/method/software comprising:

memory (Fig. 1, 111) and a processor (107) coupled to the memory;

means for requantizing (Figs. 1 and 7, 107) a first portion (coded/compressed bitstream) of the bitstream including video data using a first re-quantization scheme (target bits per macroblock, Q_p) that does not decode the first portion into a pixel domain (please refer to the following note), and means for requantizing (Fig. 7, 702) a second portion (coded/compressed bitstream) of the bitstream that includes a P frame (Fig. 7, 703) (by way of feedback from Prediction Frame Storage Device) and video data using a second re-quantization scheme (by way of feedback from the rate control unit (113); $Q_{p_{new}}$ based on the target bits per macroblock) that includes full decoding (104, 701; col. 10, lines 23-48) and re-encoding (109, 702) of the second portion (abs.; col. 10, lines 23-57).

Note: Haskell et al does partially decodes the first portion which includes VMD and IQ processes. However, an IQ process only results in inversely quantized coefficients, which are still considered to be in a frequency domain. Furthermore, in order to decode any portion of the bitstream into a pixel domain, the decoder conventionally has to perform such as an inverse DCT (discrete cosine transform) to provide pixel domain data. Haskell et al does not perform an IDCT. Therefore, the amended claimed limitation of not decoding the first portion into a pixel domain has been met in view of the reasons as stated above.

Haskell does not seem to particularly disclose requantizing the first portion of the bitstream including a B frame.

However, Hamilton teaches method and apparatus for changing the compression level of a compressed digital signal comprising a requantization processor (Fig. 3, 60) including a selector (Fig. 5, 94) to select either requantized or original compressed signals, wherein the microprocessor (92) receives bitstream indicating whether the frame is a B, I, or P frame, and sent to the selector (col. 7, lines 18-28).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a method for converting the bit rate of a compressed bitstream as taught by Haskell et al to incorporate Hamilton's teachings as above so as to requantize the first portion of the bitstream including a B frame for a flexibility of controlling the bit-rate efficiently as desired by a plurality of endpoint user devices.

Regarding claims 4 and 29, Haskell et al discloses means for performing motion compensated re-quantization (Fig. 7, 107).

Regarding claim 5, Haskell et al discloses determining the available bandwidth of the channel (col. 1, lines 46-48).

Regarding claims 6 and 32, Haskell et al discloses re-utilizing a MV for the second portion of the bitstream (col. 14, lines 27-42).

Therefore, it would have been considered obvious to one of skill in the art to recognize creating a new MV for the second portion of the bitstream to insure more accuracy representing the displaced error signal.

Regarding claims 7 and 12-13, Haskell et al discloses changing the resolution of the second portion (Fig. 2, CIF, QCIF frames) (Note: chrominance component (U) has only half of the resolution of their luminance components) (e.g., luminance (Yn) component has 288 lines of 352 pixels and chrominance components (U, V) have 144 lines of 176 pixels).

Regarding claim 8, Haskell et al discloses a frame/picture of video data (CIF picture).

Regarding claim 11, Haskell et al discloses the compressed bit stream and the portion including the P frame, wherein the P frame is the last P frame in a GOP (col. 7, lines 22-29).

Regarding claim 14, Haskell et al does not particularly disclose re-quantization scheme being performed in real time. However, Haskell does emphasize an importance of real time communication (coil. 2, lines 47-54).

Furthermore, Hamilton teaches re-quantization scheme being performed in real-time (col. 3, lines 43-57).

Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a method for converting the bit rate of a compressed bitstream as taught by Haskell et al to incorporate Hamilton's teaching as above for performing the re-quantization scheme in real time, thereby efficiently controlling the bit-rate without encoding/decoding delay.

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Regarding claim 15, Haskell et al discloses monitoring load of a processor in a network device (Fig. 8).

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to *Shawn S An* whose telephone number is 571-272-7324.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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8. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

A handwritten signature in black ink, appearing to read 'SHAWN AN', with a long horizontal stroke extending to the right.

**SHAWN AN
PRIMARY EXAMINER**

12/09/06